

# Model FD 56 | Drying and heating chambers with forced convection

A BINDER FD series Avantgarde.Line heating oven is always used when fast drying and sterilization is required. Thanks to its fully homogeneous temperature distribution, quick dynamics and powerful fan, this heating oven saves valuable time.

#### BENEFITS

- Best energy efficiency on the market
- Excellent temporal and spatial temperature accuracy
- USB connection for recording data
- Temperature range up to +300 °C



Model 56

#### **MAIN FEATURES**

- Temperature range: +10 °C above ambient temperature to +300 °C
- Up to 30% lower energy consumption compared to conventional units on the market
- High temperature accuracy thanks to APT.line<sup>™</sup> technology
- Forced convection
- Controller with LCD display
- Electromechanical control of the exhaust air flap



Model 56

- 2 chrome-plated racks
- Stackable
- Class 2 integrated independent adjustable temperature safety device (DIN 12880) with visual alarm
- Ergonomic handle design
- USB port for recording data

### **ORDERING INFORMATION**

Interior volume [L]	Voltage	Option model	Version	ArtNo.
60	230 V 1~ ph 50/60 Hz	Standard	FD056-230V	9010-0303
	120 V 1~ ph 60 Hz	Standard	FD056UL-120V	9010-0304



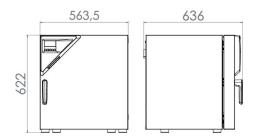
# **TECHNICAL DATA**

Description	FD056-230V <sup>1</sup>	FD056UL-120V <sup>4</sup>
Article Number	9010-0303	9010-0304
Performance Data Temperature		
Temperature range +10 °C above ambient temperature to [°C]	300	300
Temperature variation at 150 °C [± K]	1.7	1.7
Temperature fluctuation at 150 °C [± K]	0.3	0.3
Heating-up time to 150 °C [min]	15	15
Recovery time after 30 seconds door open at 150 °C [min]	4	4
Air change data		
Air change (approx.) at 100 °C [x/h]	80	80
Electrical data		
Rated Voltage [V]	230	120
Power frequency [Hz]	50/60	60
Nominal power [kW]	1.1	1.2
Unit fuse [A]	6.3	12.5
Phase (Nominal voltage)	1~	1~
Measures		
Interior volume [L]	60	60
Net weight of the unit (empty) [kg]	41	41
Permitted load [kg]	70	70
Load per rack [kg]	30	30
Wall clearance back [mm]	160	160
Wall clearance sidewise [mm]	100	100
Internal Dimensions		
Width [mm]	400	400
Height [mm]	440	440
Depth [mm]	345	345
Doors		
Unit doors	1	1
Housing dimensions not incl. fittings and connections		
Width net [mm]	560	560
Height net [mm]	625	625
Depth net [mm]	565	565
Environment-specific data		
Energy consumption at 150 °C [Wh/h]	290	290
Sound-pressure level [dB(A)]	43	43
Fixtures		
Number of shelves (std./max.)	2/4	2/4

1 All technical data is specified for unloaded units with standard equipment at an ambient temperature of +22 °C ±3 °C and a power supply voltage fluctuation of ±10 %. The temperature data is determined to BINDER factory standard following DIN 12880, observing the recommended wall clearances of 10 % of the height, width, and depth of the inner chamber. Technical data refers to 100 % fan speed. All indications are average values, typical for units produced in series. We reserve the right to change technical specifications at any time.



### DIMENSIONS incl. fittings and connections [mm]



# OPTIONS

Designation	Description	*	ArtNo.
	left		
	10 mm	01	8012-1276
	30 mm	01	8012-1016
	50 mm	01	8012-1020
	right		
	10 mm	01	8012-1269
Access port with silicone	30 mm	01	8012-1015
	50 mm	01	8012-1019
	top		
	10 mm	01	8012-126
	30 mm	01	8012-136
	50 mm	01	8012-138
	100 mm	01	8012-167
larm function for verheating	Switchable acoustic alarm, with adjustable limit value on the independent temperature safety device	-	8012-1630
nalog output 4-20 mA	for temperature values (output not adjustable)	02	8012-162
alibration certificate, xpanded	for temperature; for extending the measurement in center of chamber to include another test temperature	-	8012-1116
	for temperature, measurement in center of chamber at specified temperature	-	8012-113
Calibration certificate, temperature	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-159
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-1573
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-1552
lass 3.1 independent emperature safety evice	with visual alarm (DIN 12880)	-	8012-164
lock	battery-backed	-	8012-164
oor gasket	made of FKM, silicone-free	-	8012-164
oor lock	lockable door handle	-	8012-166
thernet interface	for Multi Management Software APT-COM™	-	8012-098
as-tight option model	Incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	-	8012-168
eating output,	for faster heating up time and improved recovery time; max. 300 °C		
einforced	120/230 V option model	-	8012-105
IEPA air filter	On fresh air supply for unit; filter classification H14 (acc. to. EN 1822-1:2009, > 99.995% at 0.3 µm)	-	8012-105
nert gas connection	With gas inlet and outlet, Ø 10 mm, incl. additional measures for the greatest possible impermeability to gas; not in conjunction with access port or interior lighting option	_	8012-168
iner chamber, einforced	max. total load 85 kg	_	8012-105
	with 15 W light bulb		
nterior lighting	120 V option model	-	8012-163
	230/240 V option model	-	8012-162

\* Notes > See last page

# BINDER

Designation	Description	*	ArtNo.
Measurement of air exchange rate	in accordance with ASTM D5374, definition and protocol according to ambient temperature	-	8012-1195
Pt 100 temperature sensor	additional flexible Pt 100, interior, for displaying the temperature on the unit display	-	8012-1620
Viewing window and interior lighting	viewing window (triple insulating glass) in door, 240 x 240 mm, and 15 W interior		
	120 V option model	-	8012-1702
	230 V option model	-	8012-1700

\* Notes > See last page

# ACCESSORIES

Designation	Description	*	ArtNo.
APT-COM™ 4 BASIC-	for simple logging and documentation requirements with up to 5 networked units.		
Edition	version 4, BASIC edition	-	9053-0039
APT-COM™ 4 GLP-	for working under GLP-compliant conditions. Measured values are documented in a tamper-proof way in line with the requirements of FDA Regulation 21 CFR 11.		
Edition	version 4, GLP edition	-	9053-004
APT-COM™ 4	convenient unit and user management built on the BASIC edition. Suitable for networking up to 100 units.		
PROFESSIONAL-Edition	version 4, PROFESSIONAL edition	-	9053-004
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-001
	IQ/OQ documents – supporting documents for validation performed by customers, consisting of: IQ/OQ checklists incl. calibration guide and comprehensive unit documentation; parameters: temperature, CO <sub>2</sub> , O <sub>2</sub> , pressure, depending on unit		
	Digital in PDF format	-	7057-000
Qualification de sumante	Hard copy inside folder	-	7007-000
Qualification documents	IQ/OQ/PQ documents – supporting documents for validation performed by customers, according to customer requirements, PQ section added to qualification folder IQ/OQ; parameters: temperature, $CO_2$ , $O_2$ – or pressure, depending on unit		
	Digital in PDF format	-	7057-000
	Hard copy inside folder	-	7007-000
Dl-	chrome plated	-	8012-203
Rack	stainless steel	-	8012-208
Rubber pads	set anti-slip feet	-	8012-203
Shelf, perforated	Stainless steel	-	6004-018
Table on castors	stable cart, casters with locking brakes, dimensions: W 1,000 x D 800 x H 780 mm	_	9051-0018

\* Notes > See last page

# SERVICES

Designation	Description	*	ArtNo.
Installation services			
Unit commissioning	Connect the unit to the customer-side connections (electricity, water, wastewater, gas), basic functions check, brief operating instructions. (excl.: unpacking, setup, controller instructions, programming, installation work)	05	DL10-0100
Unit instructions	Instruction regarding operating principle and basic functions of the unit, operation of the control electronics including programming	05	DL10-0500
Maintenance contracts			
Maintenance services			
BRONZE 3-year maintenance contract	Maintenance service as contractually agreed, visual inspection of mechanical and electrical components, check of control response, 20% discount on spare parts	05	DL20-0710
GOLD 3-year maintenance contract GOLD 3-year maintenance contract including certificate		05	DL20-0910

\* Notes > See last page

Data Sheet Model FD 56

# BINDER

Designation	Description	*	ArtNo.
Maintenance	One-off maintenance service in accordance with maintenance schedule. Visual inspection of mechanical and electrical components, testing of all key functions. Calibration of a test temperature specified by the user in center of usable space without certificate	05	DL20-0200
SILVER 3-year maintenance contract	Maintenance service as contractually agreed, visual inspection of mechanical and electrical components, check of control response, 20% discount on spare parts, testing of all key functions, calibration of one test temperature specified by the user in the center of the usable space, without certificate	05	DL20-0810
Calibration services			
Calibration certificate, temperature	Calibration of one (1) test temperature specified by the user in center of chamber, including certificate	03, 04, 05	DL30-0101
	Extension of calibration of one (1) additional test temperature specified by the user in the center of the usable space, including certificate	03, 04, 05	DL30-0102
Measurement of air exchange rate	including certificate (in accordance with ASTM D5374)	03, 04, 05	DL33-0000
Temperature measurement, 18 measuring points	Temperature measurement with 18 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0118
Temperature measurement, 27 measuring points	Temperature measurement with 27 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0127
Temperature measurement, 9 measuring points	Temperature measurement with 9 measuring points with a set value specified by the user, including certificate	03, 04, 05	DL30-0109
Validation services			
Execution of IQ/OQ	Execution of IQ/OQ in accordance with qualification folder	05	DL40-0100
Execution of IQ/OQ/PQ	Execution of IQ/OQ/PQ in accordance with qualification folder	05	DL44-0500
Warranty service			
1-year warranty extension	The warranty is extended by 1 year from the delivery date, wear parts are excluded	-	DL50-0010

\* Notes > See last page



#### NOTES

- Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge. UL mark is not granted when this option is used. 01
- 02
- Sensor calibration is performed in an accredited calibration laboratory. 03
- Calibration is performed according to the BINDER factory standard. 04
- 05 Quoted prices do not include travel costs. Please refer to the chapter on BINDER Service for travel costs for your region. Quoted prices for services performed in Switzerland do not include a country-specific added fee (available on request).

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